

REMARKS/ARGUMENTS

B this amendment claim 1-16 have been cancelled, claims 17-23 have been amended and claims 24-30 added. Basically independent claim 17 sets forth the external profile of the airfoil with the internal location of the cooling holes with the exception of cooling hole H15 identified in Table I. The other independent claim 24 sets forth the external profile of the airfoil in conjunction with the location of the cooling holes H1-H16 set forth in Table I.

The rejection of claims 17-23 on grounds of indefiniteness in that the hole H15 is not mentioned in the claim is respectfully traversed. The Examiner has identified Table I as being definite. The Examiner notes that since hole H15 is not mentioned in the claim but resides in the Table and also that there are more span locations in the table than the 5% span noted in claim 17, the claim is indefinite. The basis for the Examiner's contention is that one cannot determine if applicant is claiming less than that shown in the table. In claim 17. the first, second and intermediate holes are identified as holes numbered H1, H16 and H2-14 respectively in Table, and those holes are located in accordance with the X, Y coordinate values set forth in Table I at the 5% span. Indeed the table sets forth more information than is required in the claim. However, that by itself does not render the claim indefinite since the claim language limits the holes to the identified holes in the claim, i.e., H1, H16 and H2-H14 and limits the X, Y coordinate values to the plane at the 5% span. Applicant is not claiming Table I but merely certain information contained in Table I and that information is clearly specified upon a reading of the claim in conjunction with Table I. While the Examiner suggests having separate tables for each claim for which applicant seeks protection and such suggestion is appreciated, applicants do not believe the claim is indefinite simply because the claim refers to Table I and Table I contains

more information than necessary to meet the limitations of the claim. With respect to the dependent claims 18-20 and 23, applicants have amended the claims to clearly identify the holes and indeed in all of these claims the holes are clearly identified and exclude hole H15 (claims 17-20 and 23 and excludes holes H1 and H12-H16 in claims 21 and 22.

The rejection of claims 17-23 as unpatentable over Barry U.S. Patent No. 5,980,209 is respectfully traversed. The Examiner acknowledges that Barry does not give specific Cartesian coordinates for the holes along specific span locations nor of the hole diameters. While the Examiner states that the "blade shape (middle paragraph, page 5 of the Office Action) is not defined by Cartesian coordinates in Barry, Barry does disclose Cartesian coordinates defining the external profile of the airfoil of Barry. Perhaps the Examiner meant the cooling holes forming a generally airfoil shaped envelope in which case Barry does not disclose the shape of that envelope using X and Y coordinates.

The Examiner goes on to state that it would have been obvious matter of design choice to provide cooling holes with coordinates and diameters given in Table I and the blade shape with the coordinates given in Table II because applicants have not disclosed that such arrangement and shape provides (1) an advantage, (2) are used for a particular purpose or (3) solve a stated problem. First of all, applicants are not required by the statute to provide a specific advantage for the invention. Secondly, the arrangement of the external airfoil shape and the cooling holes provide cooling for the airfoil when used in a turbine and hence that arrangement is for a particular purpose. Finally, cooling the airfoil solves the problem of overheating of the airfoil. As to the matter of "design choice", it is only applicants' disclosure in conjunction with the Barry reference which offers that choice. It must be the teachings of the prior art which suggest the

obviousness of the claimed subject matter, not that applicant has simply chosen one arrangement not disclosed in the prior art over another arrangement which is disclosed in the prior art.

Next the Examiner states that one of ordinary skill in the art would have expected applicants' invention to perform equally well with other coordinates and hole diameters and blade shape since the design of cooling holes and airfoils is application specific. How can a person of skill in art expect applicants' invention to perform equally well when a person of skill in the art does not have knowledge of applicants' invention absent applicants' disclosure and claims.

Applicants are claiming a specific external shape to an airfoil which is different than the external shape of the Barry airfoil. Barry is silent with respect to the X and Y coordinates at various spans of the cooling holes within the Barry airfoil. The arrangement and location of the cooling holes as claimed are in fact different than those of Barry. It is this combination of an external airfoil profile with a particular arrangement of cooling holes and diameters which provide an optimal cooling arrangement for the specific airfoil.

The Examiner concludes this rejection that it would have been an obvious matter of design choice to modify Barry to obtain the invention specified in these claims. However, there is no choice without utilizing applicants' disclosure as the second choice between the choice of Barry's disclosure or applicants' disclosure. As such that cliché impermissibly uses applicants' invention as prior art.

The added claims 24-30 are similar to claims 17-23 and include the omitted hole H15, i.e., include all of the holes specified in Table I and are believed patentable for the reasons stated above.

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Accordingly reconsideration and allowance of claims presently pending in the application is respectfully requested.

Respectfully submitted,

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